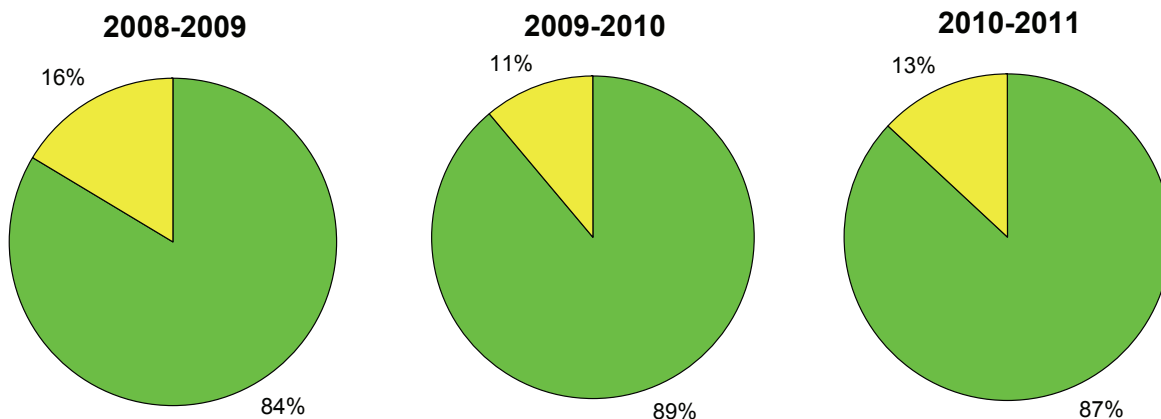


# Air Quality Summary

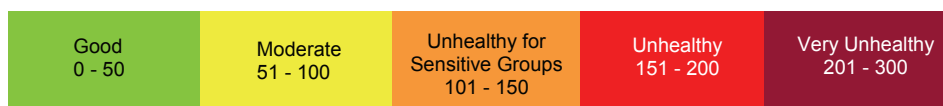
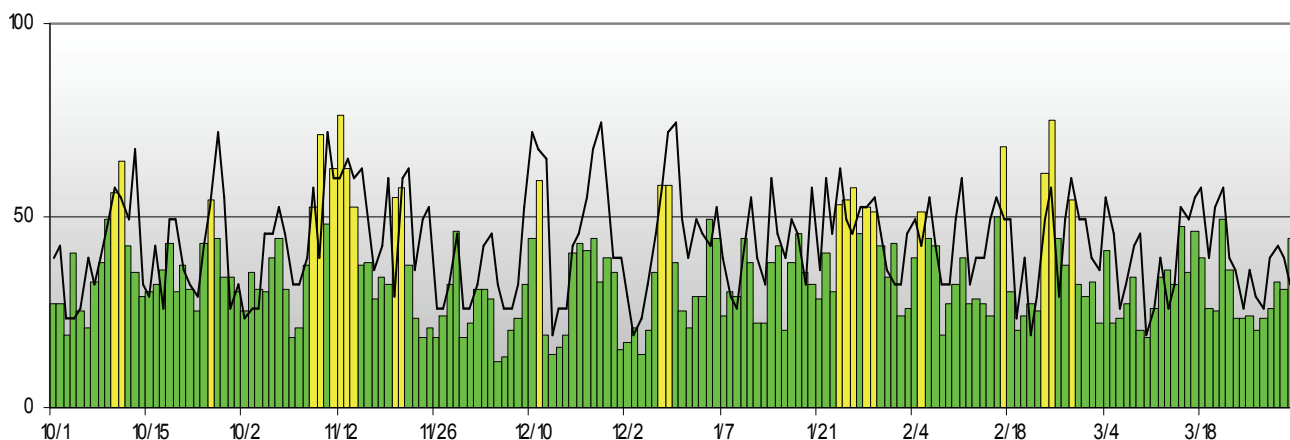
Youngstown: October 1, 2010, through March 31, 2011

Air quality in Youngstown during the 2010-2011 winter season was nearly the same as that of the 2009-2010 winter season and slightly improved compared to the 2008-2009 winter season. The primary winter season pollutant, PM<sub>2.5</sub>, is the only pollutant discussed in this report. Between October 2010 and March 2011, air quality was Good on the Air Quality Index (AQI) on 87% of days (152 days total), compared with 89% and 84% of days during the winter seasons of 2009-2010 and 2008-2009, respectively (see pie charts below). Conversely, air quality was Moderate on 13% of days (24 days total), compared with 11% and 16% of days during the winter seasons of 2009-2010 and 2008-2009, respectively. Air quality did not reach the Unhealthy for Sensitive Groups (USG) threshold this winter season. There have been zero USG days in Youngstown during the past ten winter seasons. Sonoma Technology, Inc.'s (STI) next-day forecasts captured the trend of observed air quality at the Moderate and Good AQI levels (see bar-line chart below).

## Percentage of Days at Each AQI Level



## Daily Maximum AQI Values and Forecasts



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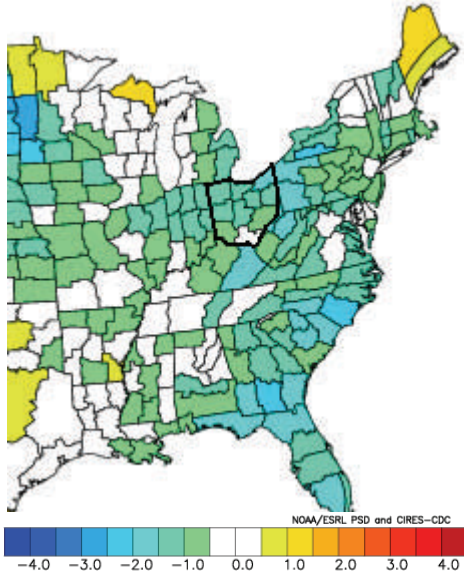


911019-4127

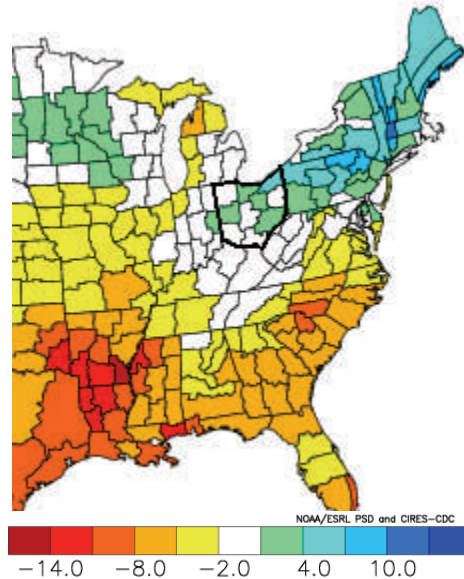
# Seasonal Weather Summary, Highest AQI, and Alert Days

During the 2010-2011 winter season, temperatures were slightly below normal in the Youngstown area compared to the 1950-2007 average, which was also the case for much of the eastern U.S. (see maps below). Precipitation was nearly to slightly above normal in the Youngstown area during the 2010-2011 winter season, with wetter conditions over the northeastern U.S. and drier conditions across the South.

Temperature Departure from Normal (°F)



Precipitation Departure from Normal (inches)



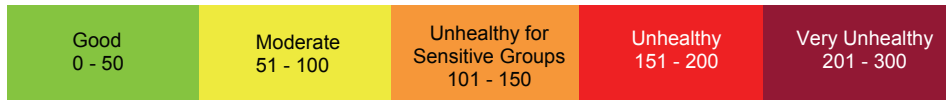
## Winter 2010-2011 Highest Observed AQI Days

During the winter 2010-2011 season, the five highest AQI days observed in Youngstown ranged from 64 to 76 on the AQI. STI's next-day forecast was correct at the Good to Moderate threshold on three of the five days; the same-day forecasts were correct on all five days.

Date	Observed AQI	Same-Day Forecast	Next-Day Forecast
10/11/2010	64	67	55
11/9/2010	71	74	39
11/12/2010	76	82	60
2/17/2011	68	67	49
2/24/2011	75	57	57

## Winter 2010-2011 Air Quality Alert Days

Eastgate did not call any Air Quality Alert Days during the winter 2010-2011 season, which was also the case for the previous two winter seasons.



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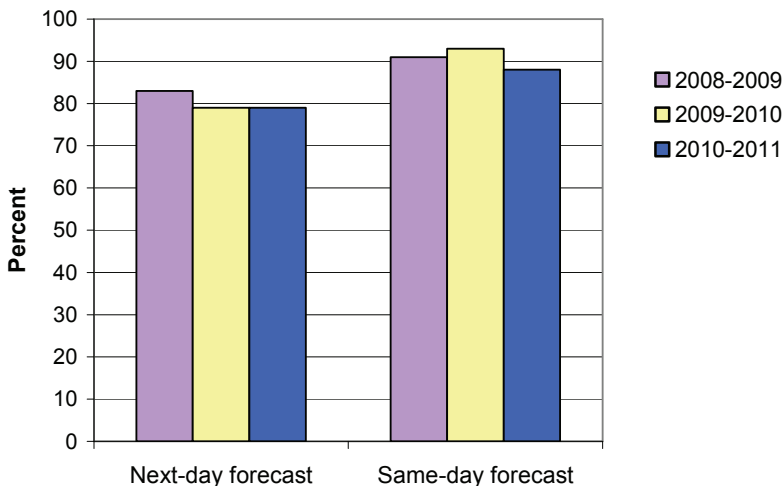


# Forecast Performance

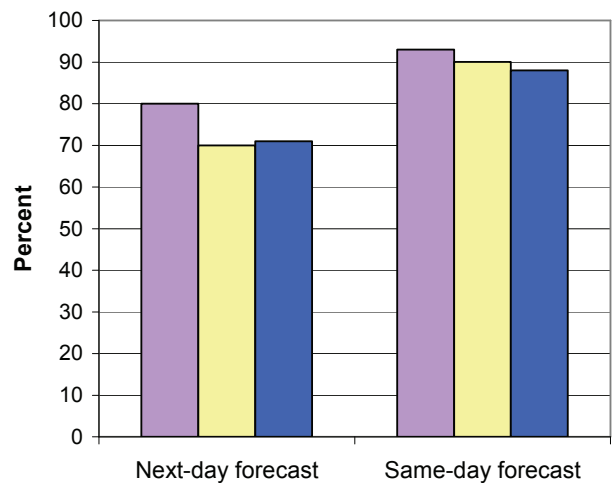
## Same-Day and Next-Day Forecast Statistics for the Good-Moderate AQI Threshold

STI provides same-day, next-day, and extended AQI daily forecasts for Eastgate. A statistical summary of our same-day and next-day forecasting performance is shown in the charts below using the measures described at the bottom of the page. Statistics are based on a comparison between forecasted and observed AQI levels for the Good-Moderate (51 AQI) threshold.

### Percent Correct



### Probability of Detection



STI's forecast performance was very good during the 2010-2011 winter season (blue bars), with high Percent Correct (PC) and Probability of Detection (POD) values for both the next-day forecasts and same-day forecasts. Statistics from the preceding two winter seasons (purple and yellow bars) are provided for reference. Winter 2010-2011 PC scores were 79% for next-day forecasts and 88% for same-day forecasts, and the POD was 71% for the next-day and 88% for the same-day forecasts.

## Statistical Measures

**Percent Correct:** The percentage of forecasts that matched observations.

**Probability of Detection:** The ability to correctly predict high-pollution events at or above a certain threshold.

*Although Sonoma Technology, Inc. prepares air quality forecasts using the highest professional standards, forecasting is an inexact science. Therefore, Sonoma Technology, Inc. cannot assume any liability or responsibility for any consequences which might arise due to the accuracy or inaccuracy of forecasts delivered under this Contract, or for any decisions or actions taken which are based on the forecasts provided.*



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